

Winter 2014

# The Quarterly Hail

National Weather Service - Hastings, Nebraska

Volume 4, Issue 4

## Notes From the Meteorologist In Charge

Greetings!

Ah, the joys of experiencing the weather extremes in Nebraska and Kansas! Winter came calling very quickly this year after very warm start to the harvest season. I would expect we will continue to see a “roller coaster” of weather for the remainder of the winter, but what do I know?

Our Fiscal Year ended September 30<sup>th</sup>, so we are looking ahead into Fiscal Year 2015 and making plans for how we can improve products and services. The National Weather Service has developed a vision that came out of a few Congressionally sponsored studies over the last few years. In addition to some administrative shuffling at our headquarters, it will place the focus of the agency on what is coined “Weather-Ready Nation”. As you might expect, our focus will be on continuing to provide products and services to protect lives and property from high impact events related to weather or water. Our goal is to enhance our communications with government agencies to help them plan for these type events. Locally, it will require us to focus on providing products and services to give heads up to our customers of any weather or water related detailed forecasts to people managing emergencies and events that may impact the general public and the local, state and federal government infrastructure.

To you our customer, our goal is to continue to provide the best service possible. We will be working closely with the Emergency Managers and other local, state and federal officials to offer increasingly enhanced services to help them make better decisions on all things related to weather or flooding impacts. We also plan to explore new ways to find more ways to work with the academic community to more rapidly employ their research findings into our forecasting and social science programs.

On behalf of my staff, I wish you a very safe and happy holiday season. May you and your family be richly blessed this holiday season!

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### Special Points of Interest:

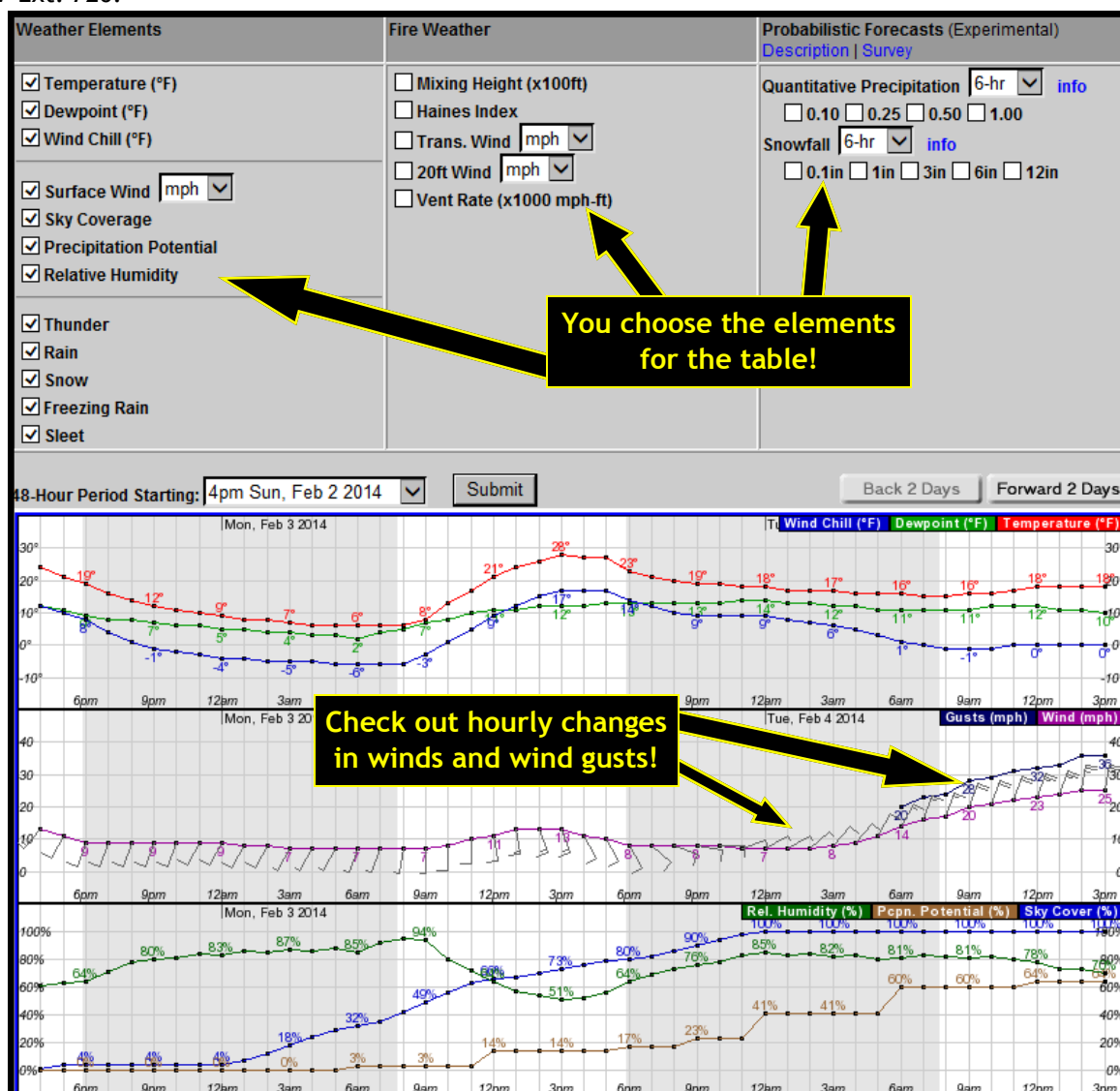
- See which cooperative observers have been presented with length of service awards.
- Learn about recent outreach activities.
- Find out how to get road condition information.
- What is the average number of days with low temperatures below zero?

## Product Highlight - Discontinuance of Wind Advisory

As of November 1, 2014, the National Weather Service (NWS) offices in Dodge City and Goodland, KS, and Hastings and North Platte, NE have ceased issuing wind advisories. Wind advisories were normally issued for sustained winds of 30 to 39 mph and wind gusts between 45 to 57 mph.

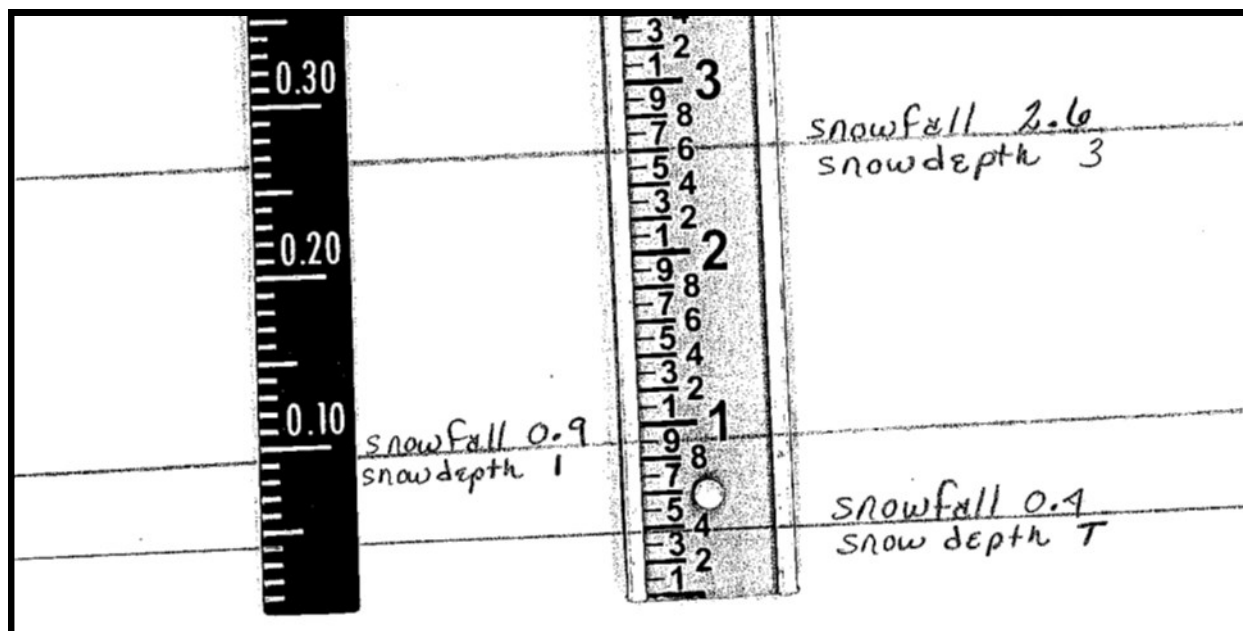
The Central High Plains National Weather Service forecast offices solicited input from users in a public online survey from April 28<sup>th</sup> to July 29<sup>th</sup> to evaluate the impacts of winds meeting advisory criteria. Input gained from users revealed that few take action to mitigate the effect of such winds, since they are so common in the High Plains. NWS advisories should be issued only for meteorological events that are rare and pose a threat to safety or have an economic impact, and user input showed that wind advisories do not meet this standard on the central High Plains. **High wind warnings will continue to be issued for events when sustained winds of 40 mph or more and/or wind gusts of 58 mph or more are expected.** Blowing dust advisories for widespread blowing dust with local visibilities near a quarter of a mile and dust storm warnings for widespread visibilities less than a quarter of a mile also will continue to be issued.

To reiterate, the same wind forecast information is still available from a variety of locations, including NWS webpages, NOAA Weather Radio All Hazards, local media and hundreds, if not thousands, of private sector webpages and apps. The only difference is a special “highlighted” text statement will not be included. Below is an example of the hourly wind data available on all NWS websites, which provides both sustained winds and gusts for a 7-day period. If you have questions or concerns, please contact Mike Moritz via email at [Michael.Moritz@noaa.gov](mailto:Michael.Moritz@noaa.gov) or phone at 402.462.2127 Ext. 726.



## Notes From MoM (Mind of Marla) - Marla Doxey, Data Acquisition Program Manager

Fresh snow cover can be quite beautiful, but difficult to measure at times. Then there are the annoying times where you grabbed your black rain stick instead of the snow stick. The picture below shows how you can still use it for snow. It will be interesting to see how much snow we get this season. I have noticed a tendency of reporting 24 hour snow fall amounts in whole inches. For example, 3.0, 4.0, 1.0, etc. While this may happen on occasion, the majority of your new snowfall events should be more like 1.7, or 2.2, or 3.5 or something similar. Whether you use a snow stick or your black measuring stick, the measurement would be the same, as you can see here. This example is assuming you started with no snow on the ground prior to this snow event.



If you had existing snow cover, your snow depth could be higher than the values given here, but it should give you an idea of what I am talking about.

I have also seen occasions where observers want to use a 10:1 water ratio for every snowfall event. This indicates the snow in the can was not melted and the observer simply “guessed”. While measuring snow will never be exact, you can come reasonably close. You will find the ratio is different for each snow event. We have actually had 30:1 ratios for very dry snow events and much lower ratios of 5:1 for wet snow events.

**By now all of you should have removed the funnel and smaller tube from your gauge.** Heavy snow will quickly plug the funnel and prevent it from falling inside the outer can.

If you ever have any questions on how to measure snowfall, please don't hesitate to call our office. It is staffed 24 hours a day with a minimum of two people. We also go out every 6 hours to measure snow so we have a lot of people experienced at measuring snow. Always be safe when you go out to measure.

Do not measure new snowfall on your deck or anywhere close to your house as you will get an exaggerated amount from snow blowing off the roof.



Winter



## Tips For Winter

Although we have already seen the first snow of the season fly through the air, it's never too late to become better prepared for the winter season. ***Be Prepared Before the Next Storm Strikes!***

When preparing your home or workplace for the winter season, keep in mind that the primary concerns deal with the loss of heat, power and telephone service, along with a shortage of supplies if a winter storm continues for an extended period of time.

It is very important to fully check and winterize your vehicle, which includes having a mechanic check your battery, antifreeze, wipers, windshield washer fluid, ignition system, thermostat, lights, exhaust system, heater, brakes and oil levels. If you must travel during winter conditions, it is best not to travel alone. Try to plan your travel during the day and make sure to let others know your destination, route, and when you expect to arrive. Make sure to keep your gas tank near full to avoid ice in the tank and fuel lines.

### Have a Survival Kit in Your Car!

- ◆ Mobile phone, charger and batteries
- ◆ Flashlight with extra batteries
- ◆ First-aid kit
- ◆ Tool kit, tow rope, shovel and knife
- ◆ Battery booster cables
- ◆ Compass and road maps
- ◆ A windshield scraper and brush or small broom for ice/snow removal
- ◆ Blankets/sleeping bags for insulation
- ◆ Rain gear, extra sets of dry clothes, gloves, scarf and stocking caps
- ◆ Large empty can to use as emergency toilet. Tissues, paper towels, and plastic bags for sanitary purposes
- ◆ Small can and waterproof matches to melt snow for drinking water
- ◆ Cards, games, and puzzles
- ◆ High calorie, non-perishable food, such as canned fruit, nuts, and high energy "munchies" (Include a non-electric can opener if necessary)
- ◆ A small sack of sand or cat litter for generating traction under wheels and a set of tire chains or traction mats.
- ◆ A brightly colored (preferably red) cloth to tie to the antenna



### Prepare Your Home!

- ◆ Flashlight and extra batteries
- ◆ Battery-powered NOAA Weather Radio and portable radio
- ◆ Extra food and water. Have high energy food, such as dried fruit, nuts and granola bars and food which requires no cooking or refrigeration.
- ◆ First aid supplies, extra medicine and baby items
- ◆ Heating fuel. Refuel BEFORE you are empty.
- ◆ Emergency heat source (fireplace, wood stove or space heater)
- ◆ Fire extinguisher and smoke alarm

### On the farm and for pets:

- ◆ Move animals into sheltered areas.
- ◆ Haul extra feed to nearby feeding areas.
- ◆ Have plenty of water available. Most animals die from dehydration in winter storms.
- ◆ Make sure pets have plenty of food and water.



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## Finding Road Condition Information

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Before you travel, check out the latest road conditions! For road condition information when **IN-STATE**, call 511. If you are **OUTSIDE** of the state you want information for, call the following numbers.

**Nebraska:** <http://www.511.nebraska.gov>

Out of state #: 1-800-906-9069

**Kansas:** <http://511.ksdot.org>

Out of state #: 1-866-511-KDOT (1-866-511-5368)

**South Dakota:** <http://www.safetravelusa.com/sd>

Out of state #: 1-866-MY-SD511 (1-866-697-3511)

**Wyoming:** <http://map.wyoroad.info>

Out of state #: 1-888-WYO-ROAD (1-888-996-7623)

**Colorado:** <http://www.cotrip.org/roadConditions.htm>

Out of state #: 1-303-639-1111

**Missouri:** <http://traveler.modot.org/map>

Out of state #: 1-888-ASK-MDOT (1-888-275-6636)

**Iowa:** <http://511ia.org>

Out of state #: 1-800-288-1047

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## Blizzard of January 1975: 40<sup>th</sup> Anniversary - *Julia Berg, General Forecaster*

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January 9-12, 1975, will be remembered by many as the “Blizzard of the Century” or the “Super Bowl Blizzard”. A strong weather system moved from the Rockies into the Plains then toward the Great Lakes and produced heavy snow, strong winds, cold temperatures and dangerous wind chills. The scope of coverage of the snow was large, covering areas from Nebraska and Kansas to Minnesota and from South Dakota to Illinois.

This storm broke several records for high temperatures the day before the storm hit and had record lowest pressure reported in several locations from Nebraska into the Great Lakes area as it moved through. Snowfall of 7” was reported in Sioux Falls, SD, 8” in Duluth, MN and 24” in International Falls, MN. Omaha had a foot of snow. Winds across the Midwest were 30 to 50 mph with gusts of 70 to 90 mph causing drifts that were up to 20 feet deep in some locations. The winds brought wind chill values down to dangerous levels. Sioux Falls, SD had visibility of a quarter mile or less for 24 straight hours. A 2000 foot radio tower near Sioux Falls collapsed in the wind. A total of 58 people lost their lives to the blizzard. There were livestock losses of over 100,000 head.



A flag warns plowing crews of an abandoned snow-covered car near 139<sup>th</sup> & Pacific Streets in Omaha. Copyright Omaha World Herald



Abandoned vehicles on 72<sup>nd</sup> Street south of Dodge Street in Omaha. Copyright Omaha World Herald

South central Nebraska and north central Kansas were on the western edge of the heavier snow, but some locations had a fair amount. Hunter, KS had 8” and Osceola, NE had 7”. Near Highway 281, 3-5” fell, while west of there was an inch or less. High temperatures were mainly in the 40s on the 9<sup>th</sup> and fell to the teens by the 12<sup>th</sup>. Lows dropped into the 0 to -10 degree range.

In addition to the blizzard, tornadoes were reported from the 9-12<sup>th</sup> from the Mississippi River eastward. There were 45 confirmed tornadoes that killed 12 people.

## Cooperative Observer Awards - Marla Doxey, Data Acquisition Program Manager



Toni Wood, Lake Superintendent at Glen Elder Lake, KS was presented with a **50 year Institution Length of Service Award**. This award recognizes the contribution made by the U.S. Bureau of Reclamation employees since the station began in August of 1964.

In addition to the many duties that bureau employees are responsible for, they have provided maximum and minimum temperatures, precipitation and snowfall amounts along with readings that include anemometer readings, water temperatures and how much evaporation has occurred. All of this information is used by a number of agencies and businesses. Since 1964 they have measured over 1,200 inches of rainfall. One of the wettest years was 1993 with 47.15 inches. One of the driest years was 1988 when only 16.59 inches of precipitation was measured. The year 2000 came close with only 16.91 inches.

Louise Logston, Cooperative Observer for Polk, NE received a 20 year Length of Service Award. Since starting her time as an observer in March of 1994, Louise has measured 539 inches of liquid precipitation and 510 inches of snow.



Roger Bodtke, Cooperative Observer near Shelby, NE received a 20 year Length of Service Award. Since starting his time as an observer in June of 1994, Roger has measured nearly 500 inches of liquid precipitation and 577 inches of snow. Roger is a Vietnam War veteran and a retired FAA air traffic controller.

## Cooperative Observer Spotlight - Bob Levin of Smith Center, KS

Bob Levin of Smith Center, KS has been a cooperative observer for the NWS in Hastings for the past 47 years. He has enjoyed being an observer and has seen a multitude of severe and winter storms during his lifetime. One storm he can remember in particular was opening day at the local drive-in theater he managed. On this day, the snow was so deep that he couldn't see the chain across the drive way. His fondest memory of his days as a cooperative observer was his very first one, June 21, 1967. It was on this day that he received the instruments to become an observer.

Besides being an observer, Bob has spent a lot of his time dedicated to studying and searching for fossils across all of north central Kansas and south central Nebraska. His collection includes hundreds of fossils from prehistoric periods. These include the shell of a large land tortoise called *Testudo Orthopygia*, a foot from a Columbian Mammoth, and the lower jaw from a Mastodon, just to name a few. His first fossil was a 12 foot *Xiphactinus Audax* fish he found west of Gaylord, KS in 1969. One particular fossil in his



collection remains his most precious find. A tooth from a *Polyacrodus Illingsworth* Shark is the first to be found in Kansas, and only the second tooth found in the United States. His latest discovery was the jaw from a mosasaur that lived during the Cretaceous Period, about 88 million years ago, the *Tylosaurus Proriger*. This reptile had a jaw that was 4 feet long, and would have had a body approximately 28 to 30 feet long and weighed 2400-3000 pounds.



4 foot long jaw of the *Tylosaurus Proriger*

For more information about Bob's fossil collection you can visit his website at: <http://www.angelfire.com/ks3/weather/index.html>

Bob worked for 35 years as a professional photographer and also owned the local ambulance service in Smith Center until 2000. He is married to his wonderful wife Linda, and they have 6 grown children scattered about the country.

## Celebrating 40 Years of Federal Service!



Marla Doxey, NWS Hastings Data Acquisition Program Manager celebrated 40 years (yes, 40 years!!) of government service on October 22, 2014.

Here's a look back on how Marla's career evolved and how technology has changed during her 40 years of federal service.

On August 20, 1974 Marla, a naïve country girl, set off on a journey from South Dakota, not really knowing where it would lead. She enlisted in the Air Force and had a rude awakening at 3 a.m. at Basic Training at Lackland Air Force Base (AFB) in San Antonio, TX. After completing basic training, she attended technical school to become an electrical power production specialist (diesel mechanic). Marla was the only female in her tech class, and was then assigned to the 3rd Combat Communications Group (affectionately referred to as the 3rd Herd) at Tinker AFB, OK. At Tinker, there were four females among a group of 50 men, and they were the first females to be deployed to set up a tactical base out in the middle of someone's field. The base had to be totally reliant on the supplies which were available. The diesel generators provided the power for all

operational systems as well as lighting for the tents. Meals consisted of C-rations, which is a meal ready to eat, and came in a box with their own heating element. The cans were dated back into the 1940s, but were still edible. A tent was set up for a quick, cold shower and there were no electrical outlets, so forget about using a blow dryer. The experience and training as a diesel mechanic gave her the skills to work on her own car and also pass these skills on to her sons in later years. While on her first deployment, their camp just happened to be near a building that was conducting tests on using the Doppler principle for use with weather radars. She, along with a couple other co-workers, was asked if they wanted a tour. Little did she know...

In 1978 Marla decided that she didn't want to be a diesel mechanic for the rest of her life and she put in for cross-training. She was selected for her third option, which was a weather observer (although at the time she didn't know what that was). She attended technical school in Chanute, IL. Here she learned how to take weather observations at a minimum of once an hour, by the top of the hour. Including Special and Record Special observations and what constituted the difference.

Observations had to be taken in grassy areas so this meant crossing the airport ramp. Temperature and dew point readings were taken using a sling psychrometer. While out there you observed the cloud cover and how many tenths of the sky was covered by each cloud layer, if any, and the visibility and any precipitation or obstructions to vision. The observations would not only be used on-station but also on hourly weather charts. This is what a full surface observation plot would look like on a map, only they would be much smaller. Observations like these were plotted across the United States and a forecaster would then analyze it for areas of high/low pressure, frontal systems and pressure gradients.



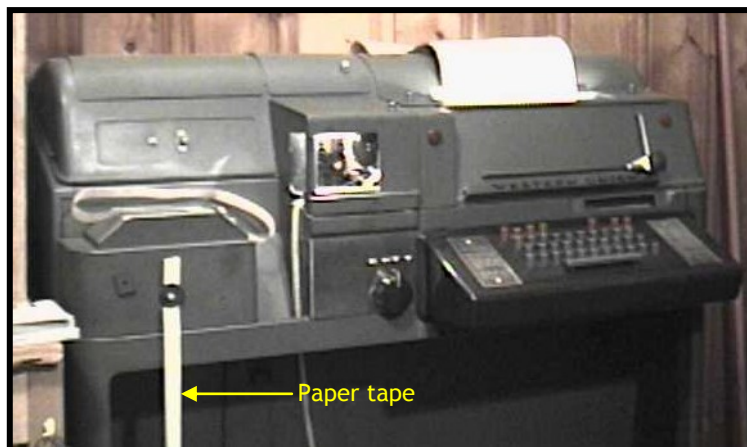
She also learned to do synoptic observations which were only done in code, no words. While Marla did not do balloon releases, she did learn to plot a skew-T by hand using the information the balloons transmitted back. After completing the course as an Honor Grad, she was stationed at Wright Patterson AFB in Dayton, OH. This was her first introduction to working rotating shifts as weather occurs 24/7. Staffing at Weather Units was far different than the diesel shop as many shifts only consisted of a forecaster and observer. Responsibilities of an observer included taking, recording and disseminating surface and synoptic observations, plotting the skew-T, assisting the forecaster with pilot weather briefings and taking radar observations once you were trained. At Wright Patterson she learned how to take radar observations using the FPS-77.

## Celebrating 40 Years of Federal Service Continued...

Surface observations and weather forecast maps in the 1970s were printed on big di-fax machines (see previous page). She would rip them off and give them to the forecasters for them to hand analyze before posting the completed maps on the forecast board. If a big weather system was moving in, she would be tasked with plotting the surface observations manually on a map of the United States.

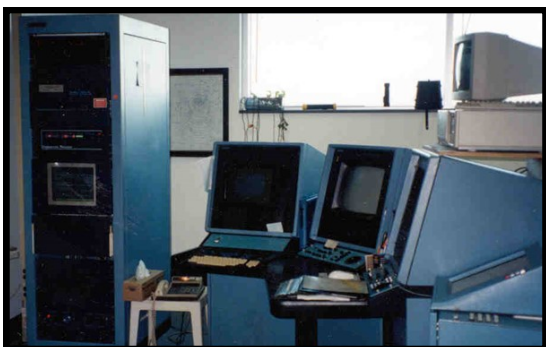
The surface plots would consist of visibility, current weather conditions, wind direction and speed, cloud cover, barometric pressure and sea level pressure. All the information at each site had to be hand plotted, and the plot needed to fit under a dime. The plots generally had to be completed in 15 minutes, and the map might consist of 50 or more sites. The maps and observations were all done by hand.

Although she thoroughly enjoyed working in the Air Force, Marla left when her time was up in 1980. She had married a C130 aircraft mechanic and started working as a meteorological technician at the NWS office in Youngstown, OH. At the Youngstown WSO office there were a total of 5 people. She was the only female. They were responsible for disseminating the forecast and warnings for a five county warning area. This was done using a teletype machine (right) where she would type and then words (holes) were punched into a paper tape. When the tape was finished, she would feed it through another part of the machine where the message/product was sent to people who had a feed to the service. If she made a mistake she had to start from scratch. The only way you would know when a mistake was made was when the machine was put in local mode and the tape was run. This would then type out the words on a roll of paper.



Marla was also responsible for taking weather observations, and the observations were sent over to the air traffic control tower via an electro-writer. On this machine she used a stylus to “write” on a piece of Plexiglas material that would control an arm at both the weather office end and the air traffic control tower, which would output the observation on a roll of paper.

Training for this job consisted of 6 weeks working one-on-one with another staff member in addition to completing workbooks and reading manuals. After she completed this initial phase she was allowed to work shifts by herself. Unlike in the Air Force where there were a minimum of 2 people at all times, at a WSO you generally worked by yourself most of the time, and the office was staffed 24/7. Midnight shifts could get rather lonely. During her first year in the NWS, she received a Reduction In Force (RIF) letter stating that her position may be eliminated due to the budget, fortunately, this did not happen. But it was rather unsettling.



After a couple years of this manual way of sending information, along came AFOS (Automation of Field Operations and Services). This system was 1960s technology, built by Ford Motor Company. Remember, we are now in the early 1980s and this was the first computer network that connected all of the NWS offices. The computer screens were in black and white and you could overlay 3 maps on top each other, but only if they had the same map background. The hard drive was the size of a large dinner platter and about 2 inches thick. You also had 2 floppy disc drives where the floppy disc was indeed “floppy” and about 6 inches square. One screen was used to prepare text products while the other 2

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## Celebrating 40 Years of Federal Service Continued...

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were used to display a variety of weather maps. This new technology allowed for faster preparation and issuance of warnings. Observations were sent using another computer with a program called MAPSO which also compiled climate data for the end of month climate product called the F6. This monthly climate product is still in use today. Suddenly, automation was making the job a lot faster and easier.

The most notable weather event during her time there was the May 31, 1985 F-5 tornado that killed 88 people as it stayed on the ground for 47 miles through northeast Ohio and western Pennsylvania. The storm system produced 40 tornadoes and continued on through New York and into Ontario, Canada. The tornado was so powerful that trees fell across the highway about a mile from the office with large tree limbs falling on the airport runways.

In 1986 Marla transferred to the NWS Forecast Office just north of Omaha, Nebraska. By now she was a single parent of 5 year old twin boys, which certainly made it a challenge with rotating shift work. Moving with kids is always stressful, try moving and finding adequate daycare when you are expected to be at work the day after you get there! In the following days you are supposed to find a place to live, after you get off work. Thankfully, the MIC was very helpful and understanding.



This move allowed her to gain more experience as their duties included upper air observations in addition to radar observations, which were totally different from surface weather observations.

This office also had NOAA Weather Radio broadcast responsibilities, which had only been touched on in one of the classes she had taken at the Training Center in Kansas City. Back then the cartridges used were similar to 8 track tapes. Before you could use them you had to run a large magnetic over both sides to erase the previous recording. So if you made a mistake, you had to remove it from the recording slot and erase it once again. Storm warnings were done live and then recorded so you had to be pretty quick.

Being a forecast/upper air office, it was larger and the staff consisted of 22 people. So you were never alone. She was assigned a partner who would work with her most of the time in addition to being her trainer. While she had the surface observations down and could work with AFOS, she had to become certified on the NWS radar and in taking upper air observations. Her biggest fear when preparing for the balloon release was that a big spider would fall on her when she opened the big door! Trying to get a good balloon release during the early morning hours in the blizzard of 1987 proved especially difficult. The first never sent back any data, the second one took a sudden turn and smacked into a telephone pole as the winds were quite strong. The forecaster then called a halt to any more releases. The staff that was there ended up being stuck there all weekend. No one could come in or out. Marla did get the reputation of being the only female they knew who would do a balloon release in high heels and a dress during fair weather days.

***Be sure to check out the Spring 2015 newsletter to read the rest of Marla's story!***



Every edition of the Quarterly Hail is published for you, our fans and customers. We want to write about things that **YOU** are interested in. Call, send an email or drop us a line in the mail and let us know what you would like to see in each edition of the Quarterly Hail. Whether you are a weather fan like us or just have a few weather questions you want answered, we want to hear from you!



Even if you're not sure what you want to see in the newsletter, we appreciate any feedback! Let us know how we are doing.

Send an email to [Michael.Moritz@noaa.gov](mailto:Michael.Moritz@noaa.gov) or call the office at (402) 462-4287

## The Science Behind Snow Ratios - *Jeff Halblaub, General Forecaster*

Forecasting snowfall amounts is very difficult and includes many factors. Making a snowfall forecast entails two parts. The first is determining how much liquid will fall. For that, we have help from computer models which generate forecasts of precipitation. As forecasters, we see that output as hundredths of an inch, as if it fell as rain. Once we recognize that temperatures in the atmosphere are cold enough to produce snow, the second part is determining how to convert that liquid into snow amounts. To help us in that endeavor, we use what is called a snow-to-liquid ratio.

As with many things in weather forecasting, coming up with a snow to liquid ratio is not an exact science. We must examine where upward motion is occurring in the atmosphere and correlate that to the temperatures in that layer, as well as above and below that layer. Temperature and humidity conditions, within the clouds, determine the size and the type of ice crystals (or snow flakes). There are several different kinds of crystals. These include plates, columns, hollow tubes, needles, and dendrites. Plates, columns, hollow tubes, and needles all land on the ground in close proximity to each other. In other words, they are highly compacted or highly dense. These types of crystals result in a snow to liquid ratio generally 10 to 1 or less. In other words, one inch of water would result in 10 inches of snow.

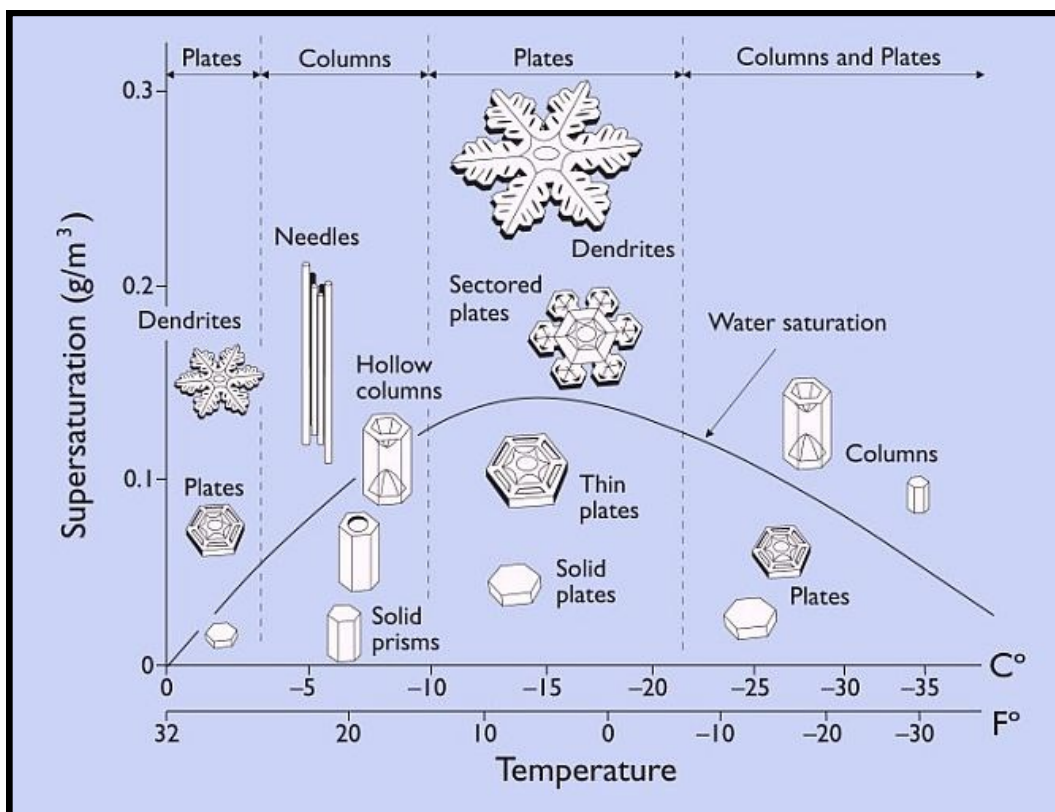
One of the other factors that contribute to low snow to liquid ratios is something called "riming". This occurs in relatively warm environments, where the temperature in the lower portions of the atmosphere is between freezing and -10 degrees C. Clouds that exist within this temperature range often have very little ice. Instead, the cloud is composed of supercooled water droplets. Snowflakes further aloft fall into this environment and become coated with these tiny droplets. This results in "rimed" snow crystals and is the reason for those heavy, wet, high-water-content snowfalls that are tough to shovel.

Compared to the other types of ice crystals, dendrites are the classic snow flakes which have fancy three-dimensional branches. As they land on the ground, there is a lot of air between the flakes, making the snow cover much less dense. These are the light, fluffy snowfalls which have less water content, sometimes significantly so. These are the types of snowflakes that accumulate very quickly, sometimes on the order of one to two inches per hour. Typical snow-to-liquid ratios are 15 to 1 to 25 to 1. In some extreme circumstances, it can be as high as 60 to 1.

Such an event occurred over south central Nebraska last December 7th.

The snow-to-liquid ratio can vary greatly over time and the region, such as Kansas and Nebraska, even within the same snowfall event. They also vary from event to event. For the NWS Hastings area of responsibility, most events have a ratio between 9 to 1 and 15 to 1, with an average of 13 to 1.

So, now you have a peek behind the curtain of snowfall forecasting and the snow to liquid ratio.



## Outreach Activities

### Kids against Hunger

In what has become an annual event, employees of NWS Hastings volunteered their time in the fight against hunger. Last September, several NWS Hastings staff packaged 5,700 meals for the Kids Against Hunger project in Hastings. Meals from this project are shipped worldwide in the fight against malnutrition. The office also donated another 260 meals in a monetary gift. Staffers from NWS Hastings also raised money for the University of Nebraska Medical Center cancer research program at an annual golf outing. The money raised to help fight cancer is in tribute to longtime Hydrometeorological Technician Larry Wirth, who passed away in 2011 after a battle with colon cancer. Larry was a great inspiration of giving and we are all proud to give back something to help cure this disease which has impacted so many lives.



Back: Rick Ewald, Ryan Pfannkuch, Shawn Rossi, Jeremy Wesely & Steve Eddy.  
Front: Scott Bryant & Mike Reed.

### Reaching Out to Kids in the Area

Did you know your local NWS office engaged nearly 1,500 students this fall in the science of weather? Yep, that's right, 1,500. Meteorologists Scott Bryant, Joe Guerrero and Mike Moritz participated in nearly a dozen school related safety days and other school presentations in September and October. They were in Arapahoe, Clay Center, Ord, Franklin, Clay Center, Hastings and Kearney to name a few places. Scott, Joe and Mike talked about weather safety, demonstrated the perils of flooding with a hands-on flood model and explained various aspects of the weather via a short scavenger hunt. Thankfully the weather cooperated with mild temperatures and light winds, as several of the events were scheduled outdoors.

If you are interested or know someone interested in these types of presentations, contact Mike Moritz via email at [Michael.Moritz@noaa.gov](mailto:Michael.Moritz@noaa.gov) or phone at 402.462.2127 Ext. 726.



Students gather at the NWS Hastings tent in Clay Center to listen to meteorologist Scott Bryant talk about flood safety.

## Employee Spotlight - Mike Bergmann, Electronics Technician



I was born during the Ice Age of 1962, out in the middle of the cosmic universe of Colorado. I grew up in the town of Longmont. I graduated from Skyline High school in 1981. I enlisted in the U.S. Air Force and started my career as an air traffic control systems repairman. I was first assigned to Mather AFB, Sacramento, CA as a radar electronics technician fixing the air traffic control systems. I then was requested to become an instructor for the radar electronics course, which I did for about 3 years. After that I became an Air Force recruiter in Walla Walla, WA for approximately another 3 years. Upon leaving recruiting service, I then went back to repairing radar systems and was stationed at K.I. Sawyer AFB, Upper Peninsula, MI. Of course the Air Force decided I needed to go overseas, so I then traveled to Lajes Field, Azores Portugal and spent 2 years on a 10 by 20 mile island in the middle of nowhere. Returning back to the mainland I was stationed back at Keesler AFB as an engineering and installation technician, which traveled around installing radar

systems at various military locations. I then volunteered to become an instructor again and finished out my 20 years with the military.

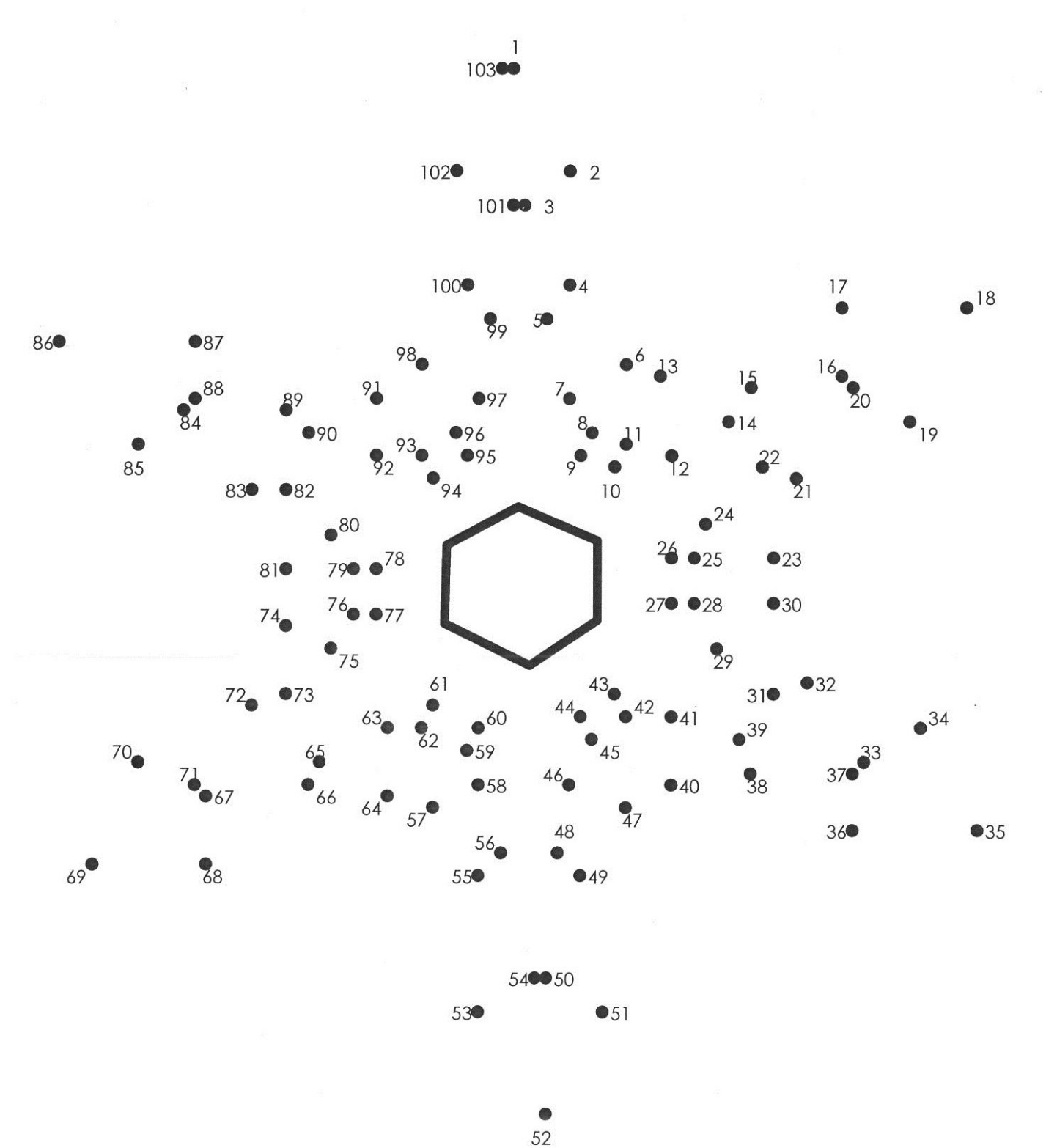
Needing to provide for my family I became a civilian contractor at Keesler AFB, fixing the radar systems that the school uses to teach on. I did this until the contract ended and we were switched to civil service employees. I then decided it was time to leave the south and travel back northward closer to my roots. So I applied and was hired as an electronics technician for the NWS and came to work at Hastings.

I am married and have been since 1982 to my wife Debra, have 2 boys and 1 girl, and have recently become a grandfather.

As you might have guessed I am very old and am told frequently quite grumpy, but I have seen a lot of different things during my time on this world. I have lived through numerous hurricanes, including Katrina, saw St. Helens blow up, felt earthquakes and dug out of 8 feet of lake effect snow. I even speak um pouco Portuguese.

# Connect the Dots!

Connect the dots from 1 to 103 and color the picture when you have finished!



## Historical Extremes Across The Area...

	Warmest Month Average Temp (Dec-Feb)	Coldest Month Average Temp (Dec-Feb)	Average # Days Low Temps Below 0° (Entire Winter)	Average # Days High Temps Above 50° (Dec-Feb only)	Highest Snowfall (Entire Winter)
Grand Island	41.4° / Feb. 1930	7.5° / Jan. 1979	9	18	86.7" / 1914-1915
Hastings	44.0° / Feb. 1954	9.5° / Dec. 1983	9	17	58.8" / 1983-1984
Kearney	41.6° / Feb. 1930	8.1° / Dec. 1983	10	19	80.1" / 1983-1984
Cambridge	44.7° / Feb. 1954	12.8° / Dec. 1983	9	28	82.5" / 1983-1984
Geneva	41.7° / Feb. 1930	9.3° / Jan. 1940	7	19	67.3" / 1959-1960
Alton, KS	45.1° / Feb. 1930	12.1° / Jan. 1940	7	31	50.9" / 1911-1912
Smith Center, KS	43.0° / Feb. 1999	12.5° / Dec. 1983	5	25	47.6" / 1957-1958

## Winter Climate Outlook Detailed Below...

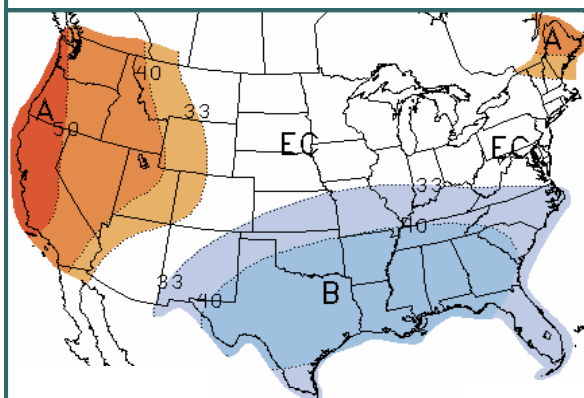
The latest Winter Outlook from the Climate Prediction Center (released on Nov. 20th) calls for equal chances of above normal, below normal, or near normal temperatures and precipitation across South Central Nebraska and North Central Kansas.

**Time Frame:** The NWS defines the “winter” season as being the calendar months of December-February. Although this differs somewhat from the astronomical winter season that runs from Dec. 21-March 19, using these three full months is convenient for calculating meteorological data.

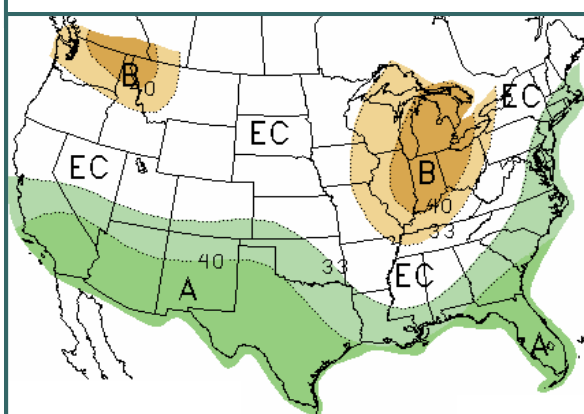
**Temperature:** The outlook on the right reflects a forecast for the 3-month period as a whole. We tend to view temperatures in the context of a daily or monthly average, but the 3-month outlook accounts for the entire season. Red/orange colors represent “warmer” than normal and Blue colors represent “cooler” than normal. The white area labeled “EC” designates regions with equal chances of having above, near or below normal temperatures. As the image shows, nearly the entire local area is within this “equal chances” portion of the outlook. This means that there is currently not a strong enough indicator in long-range forecast trends to justify either above or below normal temperature expectations.

**Precipitation:** Similar to temperatures, the precipitation outlook depicts the total precipitation trend for the entire 3-month period, and is independent of individual days or months. Green colors represent “wetter” than normal and Orange/brown colors represent “drier” than normal. The white area labeled “EC” designates regions with equal chances of having above, near or below normal precipitation. As depicted, the local area is in the same boat regarding the winter precipitation outlook as it is for the temperature outlook. This means there is no clear trend in the forecast analysis to support one of these outcomes over another. Although a “weak” El Niño episode may yet develop this winter in the Pacific Ocean, it is not currently expected to strongly influence longer-term weather patterns in the local area.

Temperature Outlook for Winter 2014  
(December - February)



Precipitation Outlook for Winter 2014  
(December - February)



To view these and other Climate Prediction Center outlooks visit <http://www.cpc.ncep.noaa.gov/>

## National Weather Service

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## Meet the Rest of the Staff at WFO Hastings

### ***Meteorologist-In-Charge***

Steve Eddy

### ***Warning Coordination Meteorologist***

Mike Moritz

### ***Science and Operations Officer***

Rick Ewald

### ***Data Acquisition Program Manager***

Marla Doxey

### ***Electronic Systems Analyst***

Mark Fairchild

### ***Information Technology Officer***

Carol Cartier

### ***Administrative Assistant***

Victor Schoenhals

### ***Electronics Technician***

Mike Bergmann

### ***Meteorological Intern / Hydrometeorological Technicians***

Briona Saltzman • Joe Guerrero / Mike Reed • Phil Beda



### ***Lead Forecasters***

Merl Heinlein • Jeremy Wesely • Cindy Fay

Shawn Rossi • Scott Bryant

### ***General Forecasters***

Julia Berg • Angela Pfannkuch

Ryan Pfannkuch • Jeff Halblaub